

**Notice of Allowability**

Application No.

10/821,425

Applicant(s)

PAUL D. HURWITZ

Examiner

Thanh Y. Tran

Art Unit

2822

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 09 April 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 5/10/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

  
**AMIR ZARABIAN****SUPERVISORY PATENT EXAMINER****TECHNOLOGY CENTER**

**DETAILED ACTION**

***Allowable Subject Matter***

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a method for forming an NPN device and a vertical PNP device on a substrate by the steps: *forming an opening in the buffer layer which is formed on the insulating layer; forming a semiconductor layer on the buffer layer and in the opening, the semiconductor layer has a first portion which is situated in the opening in the NPN region, and a second portion of the semiconductor layer is situated on the buffer layer in the PNP region; wherein the first portion forms a single crystal base of the NPN device, and the second portion forms a polycrystalline emitter of said vertical PNP device*, in combination with other claim limitations, as recited in independent claim 1.

The prior art of record does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a structure comprising: *a buffer layer has an opening and is situated on the insulating layer; a semiconductor layer is situated on the buffer layer and in the opening, the semiconductor layer has a first portion which is situated in the opening, and a second portion of the semiconductor layer is situated on the buffer layer in the PNP region; wherein the first portion forms a single crystal base of the NPN device, and the second portion forms a polycrystalline emitter of said vertical PNP device*, in combination with other claim limitations, as recited in independent claim 8.

The prior art of record does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a method for forming an NPN device and a vertical PNP device on a substrate by the steps: *forming a first opening in the insulating layer in the PNP region; forming a second opening in the buffer layer; forming a semiconductor layer on the buffer layer and in the second opening, the semiconductor layer has a first portion which is situated in the second opening in the NPN region, and a second portion of the semiconductor layer is situated on the buffer layer in the PNP region; wherein the first portion forms a single crystal base of the NPN device, and the second portion forms a polycrystalline emitter of said vertical PNP device*, in combination with other claim limitations, as recited in independent claim 15.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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